

### **Amendments to the Claims**

This listing of claims will replace the originally filed claims in the application.

#### **Listing of Claims:**

Claims 1 – 17 (cancelled)

Claim 18 (new):        A method which may be used for freezing a food product, said method comprising:

- a)        freezing at least one surface of a product, wherein said freezing:
  - 1)        comprises bringing said product into contact with a refrigerating surface;
  - 2)        takes place in a treatment container; and
  - 3)        results from the use of a vibrating support and a film of a cryogenic liquid placed on said support;
- b)        providing a first heated temperature probe at a location immediately prior to the exit of said products from said treatment container, wherein said first temperature probe measures a temperature at its location;
- c)        providing a cryogenic liquid supply system, wherein said supply system comprises a proportional valve; and
- d)        providing a first data acquisition and processing unit which receives temperature information from said first temperature probe, and which can control the opening of said proportional valve.

Claim 19 (new):        The method of claim 18, wherein:

- a)        said vibrating support comprises a slight downward slope and ends in a slight rise;
- b)        said vibrating support is capable of containing a quantity of said cryogenic liquid; and
- c)        said first temperature probe is located approximately at a point where said cryogenic liquid accumulates.

Claim 20 (new):        The method of claim 18, wherein said vibrating support has an upward slope.

Claim 21 (new):        The method of claim 20, further comprising providing a grill, wherein:

- a) said grill is substantially located on said surface of said vibrating support;  
and
- b) said grill removes at least part of said cryogenic liquid from said products  
as said products pass over said grill.

**Claim 22 (new):** The method of claim 18, further comprising:

- a) providing a product temperature probe, wherein said product probe:
  - 1) is located in the passage of said products at an exit of said treatment container; and
  - 2) measures said product temperature after treatment; and
- b) providing a second data acquisition and processing unit, wherein said data acquisition and processing unit:
  - 1) receives temperature information from said product probe; and
  - 2) controls at least one member selected from the group consisting of:
    - i) the inclination slope of said support;
    - ii) the frequency of vibration of said support; and
    - iii) the opening of said proportional valve.

**Claim 23 (new):** The method of claim 18, further comprising:

- a) providing a safety temperature probe in said treatment container, wherein said safety probe:
  - 1) is located slightly in front of said product's exit from said container;  
and
  - 2) measures a temperature at its location;
- b) providing an on/off valve for said cryogenic liquid supply; and
- c) providing a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
  - 1) receives temperature information from said safety probe; and
  - 2) can control said on/off valve in order to open or close said valve.

**Claim 24 (new):** The method of claim 23, wherein said safety probe is a heated probe.

**Claim 25 (new):** The method of claim 18, wherein said cryogenic liquid comprises liquid nitrogen.

**Claim 26 (new):** The method of claim 24, wherein:

- a) said safety probe or said first temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.

**Claim 27 (new):** An apparatus which may be used to freeze a product, said apparatus comprising:

- a) a treatment container for at least one product, wherein said treatment container comprises:
  - 1) a vibrating support capable of receiving a film of a cryogenic liquid;
  - 2) an inlet; and
  - 3) an outlet;
- b) a first heated temperature probe located before said outlet, wherein said first temperature probe measures a temperature at its location;
- c) a supply system for said cryogenic liquid, wherein said supply comprises a proportional valve; and
- d) a first data acquisition and processing unit, wherein said first data acquisition and processing unit is capable of:
  - 1) receiving temperature information from said first temperature probe; and
  - 2) controlling the opening of said proportional valve.

**Claim 28 (new):** The apparatus of claim 27, wherein said product comprises a food product.

**Claim 29 (new):** The apparatus of claim 27, wherein:

- a) said vibrating support comprises a slight downward slope and ends in a slight rise;
- b) said vibrating support is capable of containing a quantity of said cryogenic liquid; and
- c) said first temperature probe is substantially located at a point where said cryogenic liquid accumulates.

**Claim 30 (new):** The apparatus of claim 27, wherein said vibrating support has an upward slope.

**Claim 31 (new):** The apparatus of claim 30, further comprising a grill substantially located on a surface of said vibrating support, wherein said grill is capable of filtering at least part of said cryogenic liquid contained in said product as said product passes over said grill.

**Claim 32 (new):** The apparatus of claim 27, further comprising:

- a) a product temperature probe located near said outlet, wherein said product probe is capable of measuring a temperature of said product as it leaves said treatment unit; and
- b) a second data acquisition and processing unit, wherein said second data acquisition and processing unit:
  - 1) receives temperature information from said product probe; and
  - 2) controls at least one member selected from the group consisting of:
    - i) the inclination slope of said support;
    - ii) the frequency of vibration of said support; and
    - iii) the opening of said proportional valve.

**Claim 33 (new):** The apparatus of claim 27, further comprising:

- a) an on/off valve for said cryogenic liquid supply;
- b) a safety temperature probe located near said outlet, wherein safety probe is capable of measuring a temperature at its location; and
- c) a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
  - 1) is capable of receiving temperature information from said safety probe; and
  - 2) is capable of controlling the opening or closing of said on/off valve.

**Claim 34 (new):** The apparatus of claim 33, wherein said safety temperature probe is a heated probe.

**Claim 35 (new):** The apparatus of claim 34, wherein:

- a) said safety temperature probe or said first temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.

**Claim 36 (new):**        **An apparatus which may be used to freeze a product, said apparatus comprising:**

- a)     a treatment container for at least one product, wherein said treatment container comprises:
  - 1)     a vibrating support capable of receiving a film of a cryogenic liquid;
  - 2)     an inlet; and
  - 3)     an outlet;
- b)     a first heated temperature probe located before said outlet, wherein said first temperature probe measures a temperature at its location;
- c)     a supply system for said cryogenic liquid, wherein said supply comprises a proportional valve;
- d)     a first data acquisition and processing unit, wherein said first data acquisition and processing unit is capable of:
  - 1)     receiving temperature information from said first temperature probe; and
  - 2)     influencing the opening of said proportional valve;
- e)     a product temperature probe located near said outlet, wherein said product probe is capable of measuring a temperature of said product as it leaves said treatment unit;
- f)     a second data acquisition and processing unit, wherein said second data acquisition and processing unit:
  - 1)     receives temperature information from said product probe; and
  - 2)     controls at least one member selected from the group consisting of:
    - i)     the inclination slope of said support;
    - ii)    the frequency of vibration of said support; and
    - iii)   the opening of said proportional valve;
- g)     an on/off valve for said cryogenic liquid supply;
- h)     a safety temperature probe located near said outlet, wherein said safety probe is a heated probe capable of measuring a temperature at its location; and
- i)     a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
  - 1)     is capable of receiving temperature information from said safety probe; and
  - 2)     is capable of influencing the opening or closing of said on/off valve.

**Claim 37 (new):**        **The apparatus of claim 36, wherein:**

- a)        said safety temperature probe or said first temperature probe is a double probe comprising a first and a second resistor;**
- b)        said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and**
- c)        said second resistor is supplied with a voltage which generates heat.**